IV. REMARKS

Applicants have carefully reviewed the Examiner's Office Action dated March 25, 2004, in which the Examiner rejected claims 8 and 10 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention; objected to the title of the invention because of not being descriptive; rejected claim 6 under 35 U.S.C. 102(b) as being anticipated by Kamasz et al. (U.S. 5,585,652); rejected claims 6, 7 and 9 under 35 U.S.C. 103(a) as being unpatentable over Nagura (U.S. 5,025,318) in view of Leacock et al. (U.S. 5,398,060).

Amendment to the Title

The title of the invention has been amended as kindly suggested by the Examiner.

Amendments to the Claims

Applicants have amended the claims in order to define more particularly the invention taking into consideration the outstanding Office Action. Claims 8 and 10 have been amended to overcome 35 U.S.C. 112 rejections. Moreover, claim 10 has been rewritten including all of the limitations of the base claim and intervening claims, and therefore would be allowable as the Examiner has acknowledged. Claim 6 has been amended to overcome 35 U.S.C. 102(b) rejections and 35 U.S.C. 103(a) rejections. The amendment is fully supported by the original disclosure of this application and therefore does not constitute the introduction of any new matter into this case.

Rejection under 35 U.S.C. 112

The Examiner rejected claims 8 and 10 under 35 U.S.C. section 112, second paragraph. Specifically, the Examiner pointed out that the use of the phrase "said light emitting means" has no antecedent basis.

With respect to the 112 rejections, claims 8 and 10 have been amended as set forth above to rectify the anomalies, as kindly pointed out by the Examiner, without adding any new matter. In particular, it is clearly supported by the disclosure appearing from page 3, line 21 to page 5, line 1 of the specification that the solid state imaging apparatus includes a light emitting means.

Accordingly, it is believed that the above amendments made to the claims have removed the grounds for the 112 rejections.

Rejection under 35 U.S.C. 102(b) by Kamasz et al. (U.S. 5,585,652)

The rejection of claim 6 under 35 U.S.C. 102(b) as being anticipated by Kamasz has been carefully considered but is most respectfully traversed in view of the amendment to the claim. In this regard, Applicants wish to direct the Examiner's attention to MPEP §2131 which states that to anticipate a claim, the reference must teach every element of the claim.

> "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal* ***Bros.*** ***v.*** *Union Oil Co. of California,* 814 F.2d 628,631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "The identical invention must be shown in as complete detail as is contained in the... claim." Richardson ***v.*** *Suzuki Motor Co.,* 868 F.2d 1226, 1236,9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must

be arranged as required by the claim, but this is not an *ipsissimis verbis* test, i.e., identity of terminology is not required. *In re Bond,* 910 F.2d 831,15 USPQ2d 1566 (Fed. Cir. 1990)."

The present invention, as defined in the amended claim 6, is directed to a solid state imaging device for use in a solid state imaging apparatus, the device comprising means for receiving an incident light, two physically separated accumulation means, two transfer means, control means, and means for calculating a difference.

Applicants most respectfully submit that Kamasz fails to disclose the two physically separated accumulation means.

The present invention employs two physically separated accumulation means. Therefore, the signal reading step can be timely separated from the accumulation step as shown in Figs. 3A to 3H. As a result, in the present invention, while the light emitting means is on and off repeatedly, the accumulation means can collect the signal charges of the repeated on-states and the signal charges of the repeated off-states separatedly. What the collection of the repeated signal charges is enabling is diminishing the effect of noise.

On the contrary, in Kamasz, a storage device 216 is employed as an accumulation means, and the time signal separates the second frame of photo-charges from the first one. Therefore, as shown in Figs. 3A to 3G, the signal reading step must be executed simultaneously with the

accumulation step, because the accumulation means is physically identical for both of the first frame and the second frame. As a result, during the light emitting means is on and off repeatedly, it cannot collect the signal charges of the repeated on-states and the signal charges of the repeated off-states.

Therefore, the subject matters in claim 6 are patentably distinct from the disclosures of the cited reference. Accordingly, it is most respectfully requested that this rejection be withdrawn.

Rejection under 35 U.S.C. 103(a) over Nagura (U.S. 5,025, 318) in view of Leacock et al. (U.S. 5,398,060)

The rejections of claims 6, 7 and 9 under 35 U.S.C. 103(a) as being unpatentable over Nagura (U.S 5,025,318) in view of Leacock et al. (U.S. 5,398,060) have been carefully considered but are respectfully traversed.

Applicants wish to direct the Examiner's attention to the basic requirements of a prima facie case of obviousness as set forth in the MPEP §2143. This section states that to establish a prima facie case of obviousness, three basic criteria must be met initially. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Further, MPEP §2143.03 states that all claim limitations must be taught or suggested by the prior art. In re Royka, 490 F.2d 981,180 USPQ 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art." In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious. In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

This rejection is respectfully traversed on the grounds that a prima facie case of obviousness of the amended claims has not been established.

In particular, the present invention, as defined in the amended claim 6, is directed to a solid state imaging device for use in a solid state imaging apparatus, the device comprising means for receiving an incident light, two physically separated accumulation means, two transfer means, control means for outputting the first control signal or the second control signal to select the first or the second charge accumulation means, thereby allowing the charges to be accumulated in the first or the second charge accumulation means, respectively, and means for calculating a difference.

In contrast, Nagura discloses a control means wherein the shift registers 3a and 3b are driven by the same clock pulse of bipolar waveform supplied from a clock source 4 (column 2, lines 55-57). Therefore, the odd-charges and the even-charges are accumulated simultaneously by the same signal. So to speak, the odd charges and the even-charges are separated not by time, but by a connected photosensitive element. In short, the control means generates only one signal; therefore, no selection is made; so that the charges are accumulated in the accumulation means simultaneously. As a result, Nagura cannot alleviate the effect of background light at all.

Indeed, an object of Nagura is to eliminate the stripe pattern by reducing the difference between offset voltages developed by odd- and even-number analog shift registers of a charge transfer device (column 1, lines 53-57), wherein the two analog shift registers are employed for the purpose of reducing the loss of signal intensity of charges (column 1, lines 17-21); while an object of the present invention is to provide a solid state imaging device and a solid state imaging apparatus incorporating the device therein for alleviating or eliminating the effect of background light stemming from, e.g., sunlight and/or an artificial illumination, thereby allowing a user to capture a clear image of a target subject (page 3, lines 14-20). For this reason, Nagura had to employ the control means described above unlike the present invention. And therefore, not only Nagura does not intend to teach alleviating of the effect of background light, but also it is incapable of providing the result.

Applicants most respectfully submit that additional teachings of Leacock do not overcome the deficiencies of the primary reference as discussed above and the rejections should be withdrawn.

Although Leacock discloses means for calculating a difference between two signals, Leacock does not teach the features of means for receiving an incident light, two physically separated accumulation means, two transfer means, and control means for outputting the first control signal or the second control signal to select the first or the second charge accumulation means, thereby allowing the charges to be accumulated in the first or the second charge accumulation means, respectively. Since these features - especially the control means as described above - are key elements of the present invention, the additional teachings of Leacock do not overcome the deficiencies of the primary reference as discussed above and the rejections should be withdrawn.

Accordingly, it is respectfully submitted that Examiner's hindsight combination of Nagura and Leacock is entirely improper in the absence of any suggestion, teaching or motivation given in any of the prior art references, and inasmuch as one skilled in the art would have no reason to make such combination.

Furthermore, even assuming, arguendo, that such combination were proper, such combination still cannot render the present invention obvious because neither Nagura nor Leacock discloses or even implies the present invention. Accordingly, even if every single disclosure contained in each of the references is selectively chosen and stacked together against the present invention, such combination cannot possibly suggest to an ordinary person in the art the inventive features of the present invention.

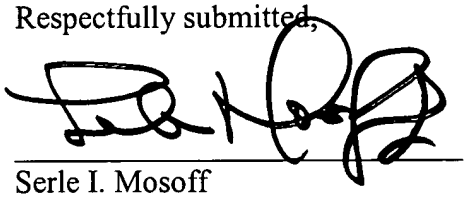
It is also believed that claims 7 and 9, indirectly or directly depending on claim 6 are allowable for the same reasons indicated with respect to the amended claim 6, and further because of the additional features recited therein which, when taken alone and/or in combination with the features recited in the amended claim 6, remove the invention defined therein further from the disclosures made in the cited references.

CONCLUSION

Applicants believe that this is a full and complete response to the Office Action. For the reasons discussed above, applicants now respectfully submit that all of the pending claims are in complete condition for allowance. Accordingly, it is respectfully requested that the Examiner's rejections be withdrawn; and that claims 6-10 be allowed in their present forms. If the Examiner feels that any issues that remain require discussion, he is kindly invited to contact applicant's undersigned attorney to resolve the issues.

Any fee due with this paper may be charged to Deposit Account No. 50-1290.

Respectfully submitted,



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